

CLAIMS

What is claimed is:

1. A cooling assembly for dissipating heat energy generated by a component, said
5 assembly comprising:
 - a base plate adapted to be mounted to the component;
 - a condenser plate disposed above said base plate;
 - an outer wall interconnecting said base plate to said condenser plate to define a
sealed chamber therebetween;
 - 10 a working fluid disposed within said sealed chamber with said working fluid having
a liquid phase and a vapor phase such that during an operation of said cooling assembly, said
liquid phase of said working fluid is disposed over said base plate and said vapor phase of
said working fluid is disposed between said liquid phase and said condenser plate; and
 - at least one partition wall mounted to said condenser plate to at least partially divide
15 said sealed chamber with said partition wall angling downwardly toward said base plate for
directing working fluid on said condenser plate toward a predefined portion of said base
plate, thereby promoting efficient dissipation of heat energy.
2. An assembly as set forth in claim 1 wherein said at least one partition wall further
includes at least two partition walls intersecting each other to form at least two corners for
20 directing said working fluid on said condenser plate toward said predefined portion of said
base plate.

3. An assembly as set forth in claim 2 wherein said at least two partition walls intersect each other to form at least four corners for directing said working fluid.

4. An assembly as set forth in claim 3 wherein said at least two partition walls are planar and intersect each other at substantially right angles.

5 5. An assembly as set forth in claim 4 wherein said at least two partition walls are substantially triangular and angle downwardly toward a central portion of said base plate for directing said working fluid on said condenser plate toward said central portion of said base plate.

6. An assembly as set forth in claim 3 wherein said partition walls remain above said
10 base plate and said liquid phase of said working fluid.

7. An assembly as set forth in claim 3 wherein said partition walls extend substantially across said condenser plate.

8. An assembly as set forth in claim 1 wherein said condenser plate is larger than said base plate, and both of said base and condenser plates having a substantially circular
15 outer configuration defining a frustoconical outer wall.

9. An assembly as set forth in claim 1 further including reinforcement ribs extending between said base plate and said condenser plate.

10. An assembly as set forth in claim 1 further including a plurality of fins mounted to said base plate to improve the dissipation of heat energy.

20 11. An assembly as set forth in claim 10 further including a plurality of fins mounted to said condenser plate to further improve the dissipation of heat energy.

12. An assembly as set forth in claim 3 wherein said partition walls abut said base plate.

13. An assembly as set forth in claim 12 further including a notch formed within said partition walls to ensure fluid communication within said divided chamber.

5 14. A cooling assembly for dissipating heat energy generated by a component, said assembly comprising:

 a base plate adapted to be mounted to the component;

 a condenser plate disposed above said base plate;

 an outer wall interconnecting said base plate to said condenser plate to define a
10 sealed chamber therebetween;

 a working fluid disposed within said sealed chamber with said working fluid having a liquid phase and a vapor phase such that during an operation of said cooling assembly, said liquid phase of said working fluid is disposed over said base plate and said vapor phase of said working fluid is disposed between said liquid phase and said condenser plate; and

15 said base plate defining a first circumference and said condenser plate defining a second circumference larger than said first circumference such that said outer wall has an angled configuration extending between said base plate and said condenser plate to provide a larger area within said sealed chamber for said vapor phase of said working fluid than said liquid phase of said working fluid, thereby promoting efficient dissipation of heat energy.

20 15. An assembly as set forth in claim 14 wherein said base plate has a curved outer configuration and said condenser plate has a curved outer configuration to define a curved outer wall that angles upwardly from said base plate to said condenser plate.

16. An assembly as set forth in claim 15 wherein said base plate and said condenser plate each have a substantially circular outer configuration defining a frustoconical outer wall.

17. An assembly as set forth in claim 16 wherein said second circumference of said
5 circular condenser plate is at least twice as large as said first circumference of said circular base plate.

18. An assembly as set forth in claim 14 further including reinforcement ribs extending between said base plate and said condenser plate.

19. An assembly as set forth in claim 14 further including a plurality of fins
10 mounted to said base plate and a plurality of fins mounted to said condenser plate to improve the dissipation of heat energy.

20. An assembly as set forth in claim 14 further including at least one partition wall mounted to said condenser plate to at least partially divide said sealed chamber with said partition wall angling downwardly toward said base plate for directing working fluid on said
15 condenser plate toward a predefined portion of said base plate, thereby promoting efficient dissipation of heat energy.